REMARKS/ARGUMENTS

This document relates to issues raised in the examiner's non-final office action mailed July 25, 2008. In that office action, claims 33-67 stand rejected by the examiner under 35 U.S.C. § 103. Primary references used by the examiner in rejecting the claims are Ellis (WO 02/32521 A1), and Berkel (Characterization & Optimization of 3D-LCD Module Design).

Claims 47 and 63 have been amended for clarification purposes in order to more accurately define the scope of the present claimed invention. No new matter has been added.

On pages 3-4 of the Office Action, the examiner states that Claims 33-43, 45-59 and 61-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis (WO 02/32521 A1) in view of Berkel (Image Preparation for 3D-LCD). This rejection is respectfully traversed for at least the reasons stated herein.

In support of the examiner's rejection of these claims, the examiner asserts on pages 3-4 of the office action:

> *...Regarding claims 33, 45-46, 49 and 65-66, Ellis describes placing a wager towards a random outcome (Ellis: pg. 5, par. 3, lines 9-11) of a 3D game played on a slot machine...Furthermore the game described by Ellis requires a 3D display and Ellis leaves the design decision towards the display to an ordinary artisan. This ordinary artisan would combine Ellis with a multi-view lenticular display created by Berkel since Ellis rotates a 20 image into 3D space (Ellis: pg. 2, par. 2) and Berkel creates 3D object using a set of 20 images (Image Preparation - Graphical User Interface: par 4, lines 12-13). Berkel discloses the program called 'Octopus Multi-view Editor' as providing an intuitive means for mapping a set of images to create a complete multi-view 3D picture (Image Preparation - Graphical User Interface: par 2). Therefore providing an ordinary artisan the necessary means to utilize the lenticular display to its fullest potential. As described above, Berkel teaches the structure of the multi-view display as positioning a lenticular lens at angle and parallel or juxtaposition to a LCD (fig. 2). As well as, a pixel mapping algorithm for N number of views for pixel (x, y) & sub-pixel (k, I) through the equations found in this office action....*

Applicant respectfully disagrees for at least the reasons stated herein.

For reference purposes, selected portions of the disclosure of Ellis are reproduced below (with emphasis added):

> *...The present invention seeks to provide an alternative electronic game of chance suitable for playing on a computer, communications device and/or slot machine including gaming machines. More particularly the invention provides an interactive electronic game in which a participant may interact by placing fictitious wagers on a random outcome for entertainment or material gain. The game in all its forms provides a player with a wide variety of options within the game framework and may be played on a personal computer, gaming or slot machine or other communications device capable of accessing the internet...More particularly the invention provides an electronic novelty game of chance in which symbols and/or shapes carrying the symbols morph (change) from two dimensions prior to spinning to three dimensions while spinning. This gives the impression to the player that the symbols are in space and out of the two dimensional plane of the display on which the symbols are presented.... (Ellis, pp. 1-2)*
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> *...According to one embodiment, said rows initially spin simultaneously then stop spinning in succession from the top to the bottom, from left to right or from right to left such that the row or rows which are spinning are displayed in three dimensions and as each row comes to a halt, the symbols, icons, number in said rows are displayed in two dimensions whereupon the resultant two dimensional display is compared to a win or pay table or data base to determine and outcome of said game... (Ellis, p. 5)*
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> *...In another broad form the present invention comprises: a game for playing on an electronic device such as a slot machine, computer or the like: the game comprising rows of symbols or numbers disposed in a plurality of parallel and/or intersecting rows; wherein each symbol or number or row of symbols or numbers is capable during the course of playing the game of undergoing a temporary transformation or displacement from a two dimensional start display to a three dimensional operating display; whereupon said display returns to a two dimensional array of random symbols; the outcome of the game determined by a comparison of said random display with a pay or win table ; wherein a participant may make a wager on the random outcome wherein the object of the game requires a player to*

achieve on a second and any subsequent screen displays like symbols or numbers in any row or in predetermined positions in said rows. Preferably, the game is provided via the internet to an unlimited number of remote participants. (Ellis, p. 6)

...Rotations of this type in two dimensions are known. However according to the embodiment shown each column is, while rotating, capable of presenting in three dimensions. Thus column 9 is shown morphing from a two dimensional state to a three dimensional state during execution of a spin command. Column 9 would, prior to spinning, have the two dimensional appearance of column 11 and as spinning commences, column 9 would gradually take on the appearance of column 10 and then finally the appearance of column 9. In full spin mode each column which may spin in unison, individually or in staggered fashion, will present an appearance as if the symbols have left the plane of the initial two dimensional display. (Ellis, p. 8)

...Thus for example row 18 is shown morphing from a two dimensional state to a three dimensional state during execution of a spin command. Row 18 would, prior to spinning, have the two dimensional appearance of row 16 and as spinning commences, row 18 would gradually take on the appearance of row 17 and then finally the appearance of row 18. In full spin mode each row which may spin in unison, individually or in staggered fashion, will present an appearance as if the symbols have left the plane of the initial two dimensional display. (Ellis, pp. 8-9)

...Once the spinning has halted the display is restored to two dimensions as shown in figure 1 resulting in a random display of symbols, icons, letters or numbers....(Ellis, p. 9)

It is clear from the explicit teachings of Ellis that the electronic gaming system of Ellis is configured or designed to provide an electronic novelty game of chance in which symbols and/or shapes are to be displayed (at different times) as both two dimensional images (e.g., at times while the symbols/shapes are not "spinning") and three dimensional images (e.g., at times while the symbols/shapes are "spinning"). For example, a shown in Figure 2 of Ellis, and described, for example, on page 8 of the specification of Ellis, the displayed shapes/symbols of column 9 (Figure 2) would, prior to spinning, have the two dimensional appearance of column 11. As spinning commences, the displayed shapes/symbols of column

9 would gradually take on the appearance of column 10 and then finally the appearance of column 9. Further, as taught on page 9 of Ellis, once the spinning has halted the display is restored to two dimensions (e.g., as shown in Ellis Figure 1) resulting in a random display of symbols; icons, letters or numbers.

On pages 3-4 of the Office Action, the examiner asserts that an ordinary artisan would be motivated to modify the display device of Ellis to include a multi-view lenticular lens-based display as taught in Berkel. Applicant respectfully disagrees, and respectfully submits that such a modification (as suggested by the examiner) would render the system of Ellis inoperable or unsatisfactory for its intended purpose.

For example, three-dimensional (stereoscopic) display of the visual fields of images for left and right eyes (constituting a stereoscopic pair) may be divided using a lenticular lens. The two images constituting the stereoscopic pair may be displayed, for example, on sets of different columns of a single panel. For example, the image for the left eye may be displayed on odd columns and the image for the right eye may be displayed on even columns.

However, a person of ordinary skill in the art would readily appreciated that, in order to provide three-dimensional (stereoscopic) views using a lenticular lens display, there is typically a sacrifice in the resolution of the display device. Additionally, as a person of ordinary skill in the art would readily appreciate at the time of the present claimed invention, a lenticular lens display (such as that corresponding to the modified lenticular lens display device of Ellis, as proposed by the examiner, for example) would be undesirable for use in displaying two-dimensional images (e.g., 2D non-stereoscopic images) such as the 2D shapes/symbols which are intended to be displayed at the electronic gaming system of Ellis at times while the symbols/shapes are not "spinning."

Moreover, as a person of ordinary skill in the art would readily appreciate, the modifying of the display device of Ellis to include a multi-view lenticular lens-based display as taught in Berkel, would render the system of Ellis inoperable or unsatisfactory for its intended purpose since, for example, such a lenticular lens display device would unnecessarily blur and/or otherwise distort the visual appearances of the two-dimensional images (e.g., 2D shapes/symbols) which, for example, are intended by Ellis to be displayed (in 2D form) at the electronic gaming system of Ellis at times while the symbols/shapes are not "spinning.

In accordance with MPEP 2143.01(V), *if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.* Accordingly, it is respectfully

submitted that one having ordinary skill in the art would not be motivated to modify the display device of Ellis to include a multi-view lenticular lens-based display as taught in Berkel in the manner suggested by the examiner.

Further, although Applicant does not concede the point, even if one were motivated to modify the display device of Ellis to include a multi-view lenticular lens-based display as taught in Berkel in the manner suggested by the examiner, it is believed that one having ordinary skill in the art would be required to exercise in inventive skill in order to overcome the two-dimensional display image distortion issues which would arise from the displaying of two-dimensional images (e.g., non-stereoscopic 2D shapes/symbols) using the multi-view lenticular lens-based display device.

For at least these reasons, it is believed that claims 33-43, 45-59 and 61-64 are neither anticipated by nor obvious in view of Ellis in combination with Berkel (and/or the other cited prior art references of record), and are therefore believed to be allowable.

On page 5 of the Office Action, the examiner states that Claims 44 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis in view of Berkel and Falconer (US 2003/0060268 A1). This rejection is respectfully traversed for at least the reasons stated herein. More specifically, as set forth below, Applicant respectfully submits that this rejection is improper under the provisions of MPEP 706.02(I)(1) and/or 35 U.S.C. § 103(c)(1), and should therefore be withdrawn.

More specifically, 35 USC § 102(e) provides:

> *[A person shall be entitled to a patent unless] the invention was described in - (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for the purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language...*

35 USC § 103(c) provides:

> *(1) Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the*

subject matter and the claimed invention were, at the time the claimed invention was made, owned by the same person or subject to an obligation of assignment to the same person.

(2) For purposes of this subsection, subject matter developed by another person and a claimed invention shall be deemed to have been owned by the same person or subject to an obligation of assignment to the same person if -

(A) the claimed invention was made by or on behalf of parties to a joint research agreement that was in effect on or before the date the claimed invention was made;

(B) the claimed invention was made as a result of activities undertaken within the scope of the joint research agreement; and

(C) the application for patent for the claimed invention discloses or is amended to disclose the names of the parties to the joint research agreement.

It is respectfully submitted that Falconer (US20030064811) qualifies as prior art under 35 U.S.C. § 102(e), and further that the present application and the Falconer reference were both commonly owned by IGT or subject to an obligation of assignment to IGT as of the filing date of the present application. Moreover, as set forth under the provisions of MPEP 706.02(I)(1) and/or 35 U.S.C. § 103(c)(1), it is respectfully submitted that the Examiner is prohibited from basing an obviousness rejection of the presently pending claims on Falconer.

Accordingly, presently pending claims 44 and 60 are believed to be allowable over the cited art of record.

Further, it is believed that none of the presently cited prior art references of record teach or suggest, either singly or in combination, additional features recited in many of the presently pending depending claims.

For example, neither Ellis nor Berkel nor any of the other cited prior art references of record appear to teach or suggest the additional feature(s) recited, for example, in dependent claims 38 and/or 54, including, for example, displaying at a display screen, using at least a portion of pixel mapping information, one or more selected portions of the stereoscopic images in a manner which results in juxtaposition of at least some of the selected image pixels with one or more respective lenticules of the lenticular screen; wherein at least a portion of the pixel mapping algorithm is based upon an expression according to: C=(1-L)x(N-1), wherein L represents a center position of a first display pixel which is associated

with a respective first lenticule; wherein N represents the number of perspective views; and wherein C represents a selected stereoscopic image of the plurality of stereoscopic images which is to be utilized for display in association with the first display pixel.

On pages 4-5 of the Office Action, the examiner asserts that

...Regarding claims 38-39 and 54-55, the lenticular reference teaches an equation, X_{offset} that calculates the proper location of a pixel when taking into consideration the angle, width or pitch and magnification of the slanted lens. In other words, the reference's X_{offset} equates to the applicant's variable. The Examiner is equating the variable C, the selected stereoscopic image as an equation that determines the image or view for location L. Even though the prior art also teaches calculating the view number, N for each sub-pixel (k,l) they are both different. Since both equations fulfill the same task the Examiner will views this difference as a matter of design choice....

Applicant respectfully disagrees.

For example, according to the teachings of Berkel:

2. MULTIVIEW PIXEL MAPPING

To determine the view number of a given point x,y in the plane of the LCD, we need to know the horizontal offset of that point with respect to the edge of the lenticular under which it is positioned. Using the micro lens magnification m and other definitions apparent from figure 2, this offset is given by

$$x_{offset} = (x - y\tan(\alpha)) \bmod(\frac{m+1}{m}\frac{p_\mu}{\cos\alpha}) \quad (1)$$

in which p_μ is the pitch of the micro lenses measured perpendicular to its long axis. $p_\mu/\cos\alpha$ the pitch measured along x-axis, and

$$(\frac{m+1}{m}\frac{p_\mu}{\cos\alpha}) \quad (2)$$

the projection of that pitch onto the LCD plane using the viewing position as origin. The magnification m can be expressed in terms of the viewing distance D and the lens focal length f, as $m+1 = fD$. To simplify things, we divide the projected horizontal lens pitch by the pixel pitch of the LCD p_h and call this the number of *views per lens X.*

$$X = \frac{m+1}{m}\frac{p_\mu}{p_h\cos\alpha} \quad (3)$$

Note that X is the number of views per lens measured along a single row of the LCD and is different from the total number of views in the multiview system. For instance, in the 7 view example of figure 1, X=3.5.

For a data graphic LCD in which pixels are arranged as an orthogonal array of RGB colour triplets, the coordinates x,y can be expressed in terms of the pixel indices k,l and the

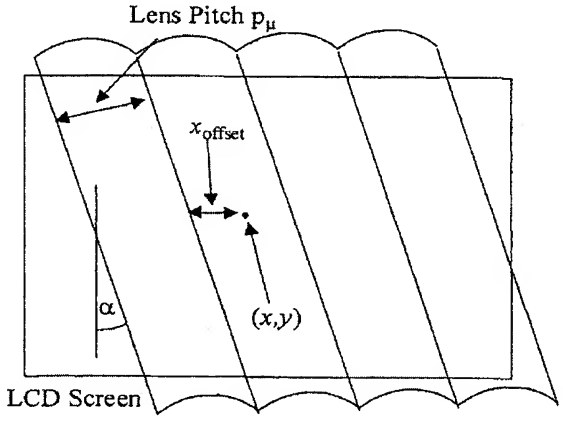

Figure 2 Multiview Pixel Mapping

horizontal pixel pitch p_h as follows:

$$x = kp_h$$
$$y = 3lp_h \qquad (4)$$

Note that the indices k,l point to individual red, green or blue (sub) pixels and not to colour triplets. Other relationships between pixel indices and x,y can be written down for displays with different pixel layouts such as video and projection displays.
Dividing the expression for x_{offset} above by the projected horizontal lens pitch, inserting the definitions for X,k and l, and introducing N_{tot}, the total number of views, we find for the view number N of each sub pixel k,l

$$N = \frac{(k + k_{offset} - 3l\tan\alpha) \bmod X}{X} N_{tot} \qquad (5)$$

This equation can be used to calculate the view number N for each pixel k,l which can then be used to assign the appropriate image data to the pixel. The parameter k_{offset} is introduced into the formula to accommodate an arbitrary horizontal shift of the lenticular lens array with respect to the LCD.

As best understood by Applicant, it is clear from these explicit teachings of Berkel that Berkel's X_{offset} parameter defined by the equation:

$$x_{offset} = (x - y\tan(\alpha)) \bmod(\frac{m+1}{m}\frac{p_\mu}{\cos\alpha})$$

does not represent a selected stereoscopic image of the plurality of stereoscopic images which is to be utilized for display in association with the first display pixel (as defined in claims 38 and/or 54, for example), but rather represents the horizontal offset of a given point x,y in the plane of the LCD with respect to the edge of the lenticular under which it is positioned.

Moreover, as noted on page 86 of Berkel, the parameter N as defined by the equation:

$$N = \frac{(k + k_{offset} - 3l\tan\alpha) \bmod X}{X} N_{tot}$$

represents the number of views (N) for each pixel k,l. As explicitly taught on Berkel page 86, this parameter N can be used to assign the appropriate image data to the pixel. For example, as taught on page 86 of Berkel:

> *...For specific sets of parameters, for instance the 7 view example above ... the view number N will always be an integer as there are only 7 different positions in which the LCD sub pixels can be located relative to the lenticular lens. For arbitrary values of a and X and fmite values of N_{tot}, N will not be an integer. In that case, in the actual mapping, we simply take the nearest integer of N to decide from which input image to take the information for a given pixel. (Emphasis Added).*

Thus, as best understood by Applicant, Berkel teaches a pixel mapping algorithm wherein the selection of the particular stereoscopic image (of a plurality of stereoscopic

images) which is to be utilized for display in association with a given pixel is determined by taking the nearest integer of N to decide from which input image to take the information for a given pixel. It is respectfully submitted that such a pixel mapping algorithm as taught in Berkel neither expressly nor inherently teaches or suggest the combination of features which are defined by the claimed pixel mapping algorithm as defined, for example, in claims 38 and/or 54 of the present application.

Accordingly, for at least these reasons, it is believed that claims 38 and 54 are neither anticipated by nor obvious in view of Ellis in combination with Berkel (and/or the other cited prior art references of record), and are therefore believed to be allowable.

The additional limitations recited in the independent claims or the dependent claims are not further discussed as the above-discussed limitations are clearly sufficient to distinguish the claimed invention from the prior art of record.

Because claims 33-67 are believed to be allowable in their present form, many of the examiner's rejections in the Office Action have not been addressed in this response. However, applicant respectfully reserves the right to respond to one or more of the examiner's rejections in subsequent amendments should conditions arise warranting such responses.

Seasonable Challenge To The Examiner's Assertions of Official Notice

On page 5 of the Office Action, the examiner asserts: *Regarding claims 48 and 64, it is well known in the art of optics to apply an anti-reflective coating to the surface of lens to reduce the reflection of light.*

Applicant respectfully believe that the Examiner intended to refer to claims 47 and 63 (rather than claims 48 and 64). Additionally, Applicant assumes that the Office Action intended to take official notice of facts under M.P.E.P. 2144.03 that "it is well known in the art of optics to apply an anti-reflective coating to the surface of lens to reduce the reflection of light."

Under M.P.E.P. 2144.03, "[i]f the applicant traverses such an assertion the examiner should cite a reference in support of his or her position." Applicant hereby traverses the assertion and respectfully requests that the Examiner cite at least one prior art reference in support of the Examiner's assertion. More specifically, while the use of anti-reflective coatings may have been generally known to one of ordinary skill in the art at the time of the invention, the Examiner has provided no documentary evidence of record to support the assertion that it was well known at the time of the invention to coat a smooth surface side of a

lenticular lens with an anti-reflective coating, and to arrange the lenticular lens such that the smooth side of the lenticular lens is positioned to face an observer/player and such that the lenticule side of the lenticular lens is positioned to face the display screen, as recited, for example, in amended claims 47 and 63 of the present application.

No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, Applicants are not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. Applicants reserve the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that Applicants have made any disclaimers or disavowals of any subject matter supported by the present application.

Applicant believes that all pending claims are allowable and respectfully requests a Notice of Allowance for this application from the Examiner. Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

Respectfully submitted,
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